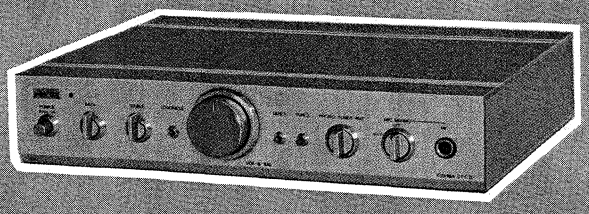
SERVICE DATA
FILE NO. 170-093

TOSHIBA

STEREO PREAMPLIFIER

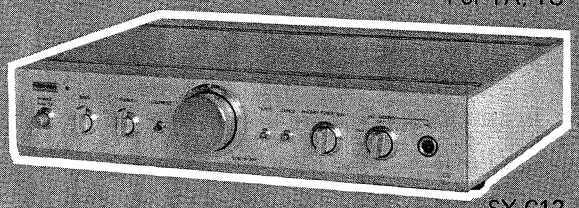
SY-C12,SY-C12B

For TE, TU, TY

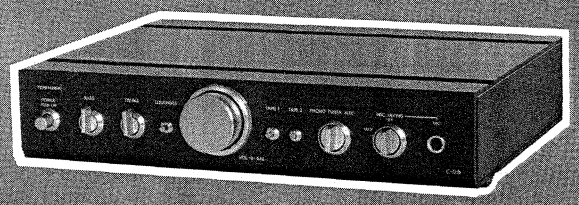


SY-C12

For TA, TC



SY-C12



SY-C12B

SPECIFICATIONS

Input Sensitivity/ Impedance:	PHONO	2.5 mV/47K ohm	
	TUNER	150 mV/47K ohm	
	AUX/TAPE	150 mV/47K ohm	
Output Level:	TAPE REC 150 mV		
	PRE OUT 1V		
Total Harmonic Distortion:	0.01%		
S/N (IHF A Network):	PHONO 78 dB		
	AUX 92 dB		
Tone Control:	BASS (at 100 Hz) ±10 dB		
	TREBLE (at 10 kHz) ±10 dB		
Frequency Response:	AUX 10 Hz to 35 kHz +1, −1.5 dB		
	PHONO 20 Hz to 20 kHz ±0.3 (RIAA equalization)		
Phono Overload Level:	180 mV		
General			
Power Supply:	220V ∿ 50 Hz or 240V ∿ 50 Hz (TE, TU, AY)		
	120V ∿ 60 Hz (TA, TC)		
Power Consumption:	8W		
Weight:	2.2 kg		
Dimensions:	257(W) x 54(H) x 208(D) mm		

Specifications are subject to change without notice.

TA, TC, TE, TU, AY

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1. BLOCK DIAGRAM

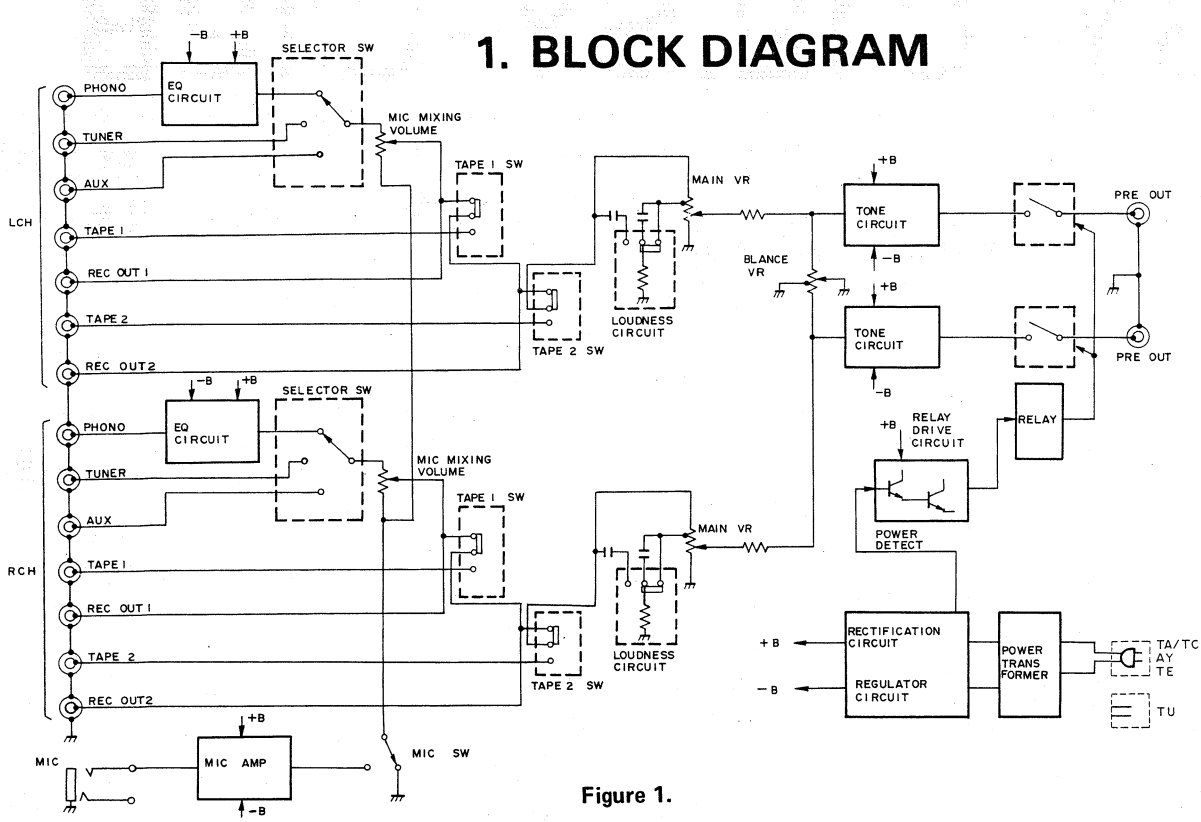


Figure 1.

2. OPERATING CONTROLS

■ LISTENING TO TAPE DECKS

Connect the tape deck input terminals (LINE IN) to the amplifier's record terminals (REC), and the deck output terminals (LINE OUT) to the amplifier's playback (PLAY) terminals.

(1) To Record on Tape

Prepare the program source (turntable, tuner, or any other audio program source) to be recorded, and set the tape deck ready to record. Note that during the actual recording, the preamplifier volume and tone controls will have no effect on the recording level or tone. Two separate tape decks may be used simultaneously.

(2) To Playback Tapes

Set the tape switch to either the TAPE 1 or TAPE 2 position, and turn the tape deck on for playback.

(3) Tape Dubbing

When two tape decks are used simultaneously, dubbing can be performed from TAPE 1 to TAPE 2. Insert the recorded tape in the deck connected to the TAPE 1 terminals, depress the tape 1 button and release the tape 2 button. Now, playback tape deck 1; the signal from the first tape deck will be recorded onto the tape in the second deck.

If the tape 2 switch, is turned ON, the second tape deck can be played back, but no signal can be sent to or from the first tape deck.

CONNECTION OF THE TAPE DECK

Since the amplifier is provided with 2 sets each of recording terminals (REC) and playing terminals (PLAY), 2 tape deck units can be connected.

FRONT VIEW (The photographs are ones of SY-C12, European Model)

POWER SWITCH
When this switch is pushed, power is supplied to the set and the power indicator lights up. Push again to turn off power.

FUNCTION SWITCH (PHONO, TUNER, AUX)
PHONO: This is the position for a turntable with an MM cartridge.
TUNER: Set to this position to listen to FM and AM broadcasts from the tuner.
AUX: Set to this position when other inputs are used.

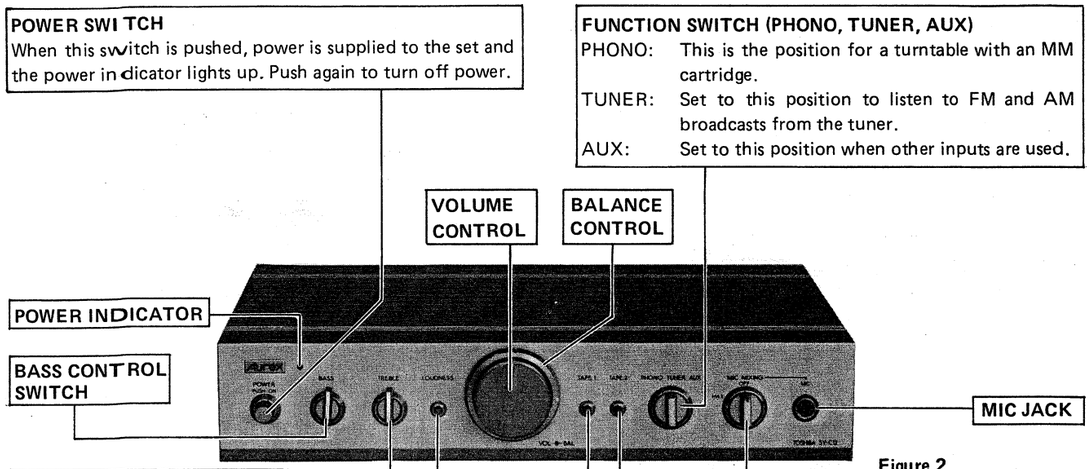


Figure 2

LOUDNESS SWITCH
This switch compensates for the frequency response of the human ear at low volumes. In the ON position, low and high frequencies are enhanced when listening at low volume levels.

TAPE 1, 2 SWITCH
This should be set at TAPE 1 or TAPE 2 only for playing a tape or for monitoring the recorded status of a tape. When using a tape deck with a built-in monitor function, the recorded status of a tape can be monitored by setting the appropriate tape switch to ON.

MIC MIXING SWITCH
This is a volume control knob for adjusting the volume levels of the microphone and the other program source (PHONO, TUNER or AUX). When turned in the counterclockwise direction, the microphone volume level is reduced, and finally turned off altogether, in which case only the program source will be audible. When turned in the clockwise direction, the source volume level is reduced, and the microphone volume level is increased.
When not employing the mic mixing function, turn this knob fully in the counterclockwise direction

REAR VIEW

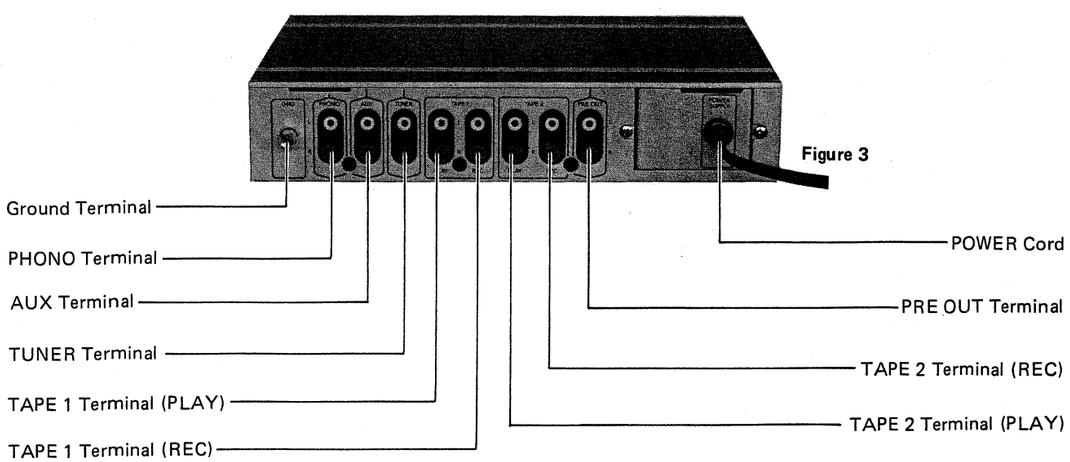


Figure 3

3. DISASSEMBLY INSTRUCTIONS

REMOVAL OF FRONT PANEL
(The photographs are ones of SY-C12, Euroupean Model)
1. Remove the four knobs ① as shown in Figure 4.
2. Remove the three BID tapping screws ② (3ϕ x 8 mm) and the two BID screws ③ (3ϕ x 45 mm) on the mold chassis side as shown in Figure 5.
3. Pull out the front panel in the arrow direction ④, and the panel can be removed from the main chassis and you can check the pattern side of the P.C. Board as shown in Figure 5.

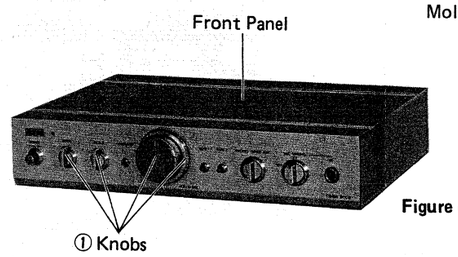


Figure 4

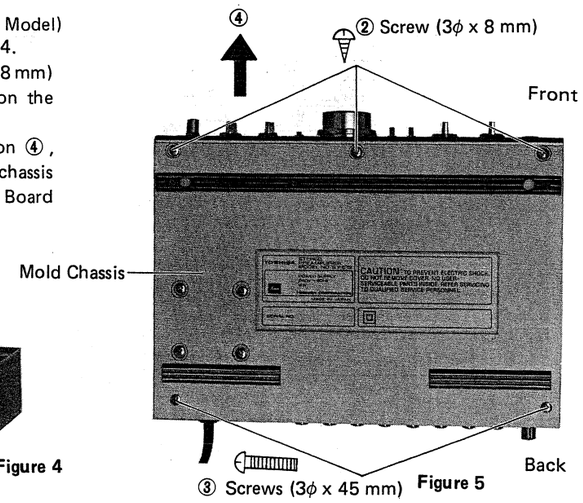


Figure 5

REMOVAL OF P. C. BOARD

1. Remove the five hexagon nuts ⑤ holding the controls and switches as shown in Figure 5. (About the two hex nuts of them, proceed after removal of the microphone and select knobs).
2. Remove two BID tapping screws ⑥ (3ϕ x 8 mm) as shown in Figure 6.
3. Take off the portion ⑦ soldered on the P. C. Board.
4. Pull the back plate from the main chassis.

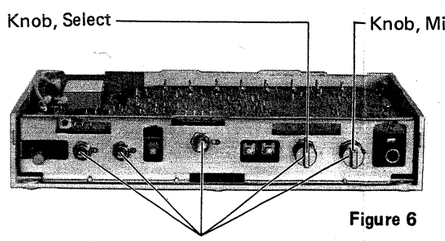


Figure 6

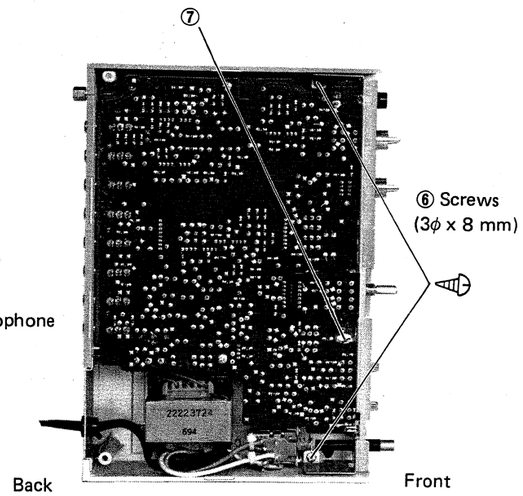
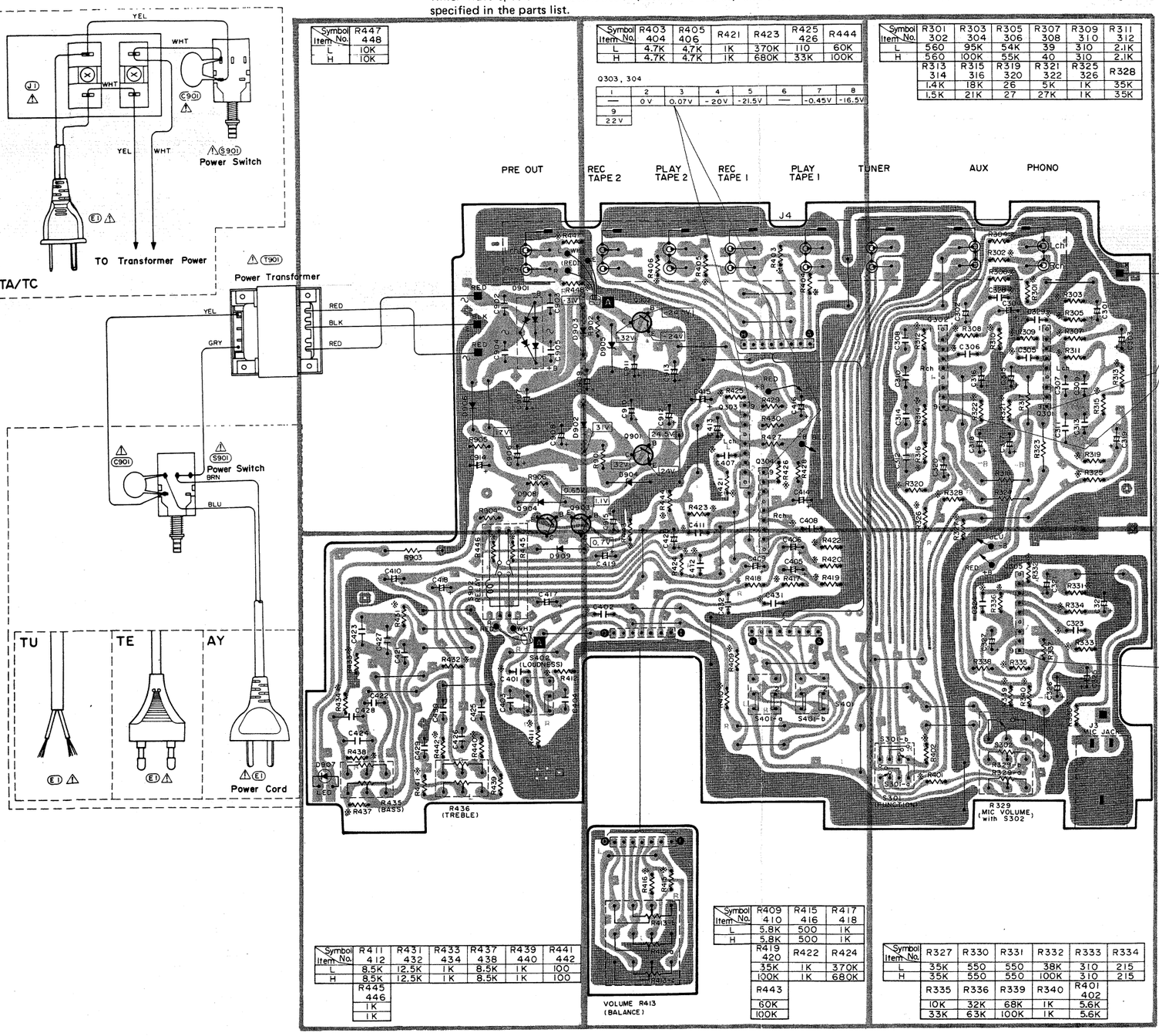


Figure 7

4. ELECTRICAL PARTS LOCATIONS

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.



Symbol / Item No.	R447 448
L	10K
H	10K

Symbol / Item No.	R403 404	R405 406	R421	R423	R425 426	R444
L	4.7K	4.7K	1K	370K	110	60K
H	4.7K	4.7K	1K	680K	33K	100K

Symbol / Item No.	R301 302	R303 304	R305 306	R307 308	R309 310	R311 312
L	560	95K	54K	39	310	2.1K
H	560	100K	55K	40	310	2.1K

R313 314	R315 316	R319 320	R321 322	R325 326	R328
1.4K	18K	26	5K	1K	35K
1.5K	21K	27	27K	1K	35K

Q303, 304

1	2	3	4	5	6	7	8	9
—	0V	0.07V	-20V	-21.5V	—	-0.45V	-16.5V	22V

Q301, 302

1	2	3	4	5	6	7	8	9
—	0V	0.15V	-22.5V	-24V	—	0.1V	-18V	24V

Q305

1	2	3	4	5	6	7	8	9
—	0V	0.15V	-21V	-22V	—	-0.9V	-16.5V	2.2V

Symbol / Item No.	R411 412	R431 432	R433 434	R437 438	R439 440	R441 442
L	8.5K	12.5K	1K	8.5K	1K	100
H	8.5K	12.5K	1K	8.5K	1K	100

R445 446
1K
1K

Symbol / Item No.	R409 410	R415 416	R417 418
L	5.8K	500	1K
H	5.8K	500	1K

R419 420	R422	R424
35K	1K	370K
100K	1K	680K

R443
60K
100K

Symbol / Item No.	R327	R330	R331	R332	R333	R334
L	35K	550	550	38K	310	215
H	35K	550	550	100K	310	215

R335	R336	R339	R340	R401 402
10K	32K	68K	1K	5.6K
33K	63K	100K	1K	5.6K

Figure 8

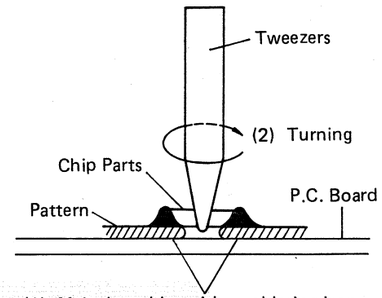


Figure 9.

REPLACEMENT OF CHIP PARTS

1. Use substitutions whose parts numbers are indicated in the parts list when replacing chip parts.
2. **REMOVING CHIP PARTS**
   Melting solder on both ends of chip parts with a soldering iron and remove it by turning with tweezers as shown in Figure 9.

NOTE: 1) Confirm the constant of chip resistors by in-circuit resistance value.
2) Never use the chip parts removed again.

※ Marks is Chip Parts.
As the resistance value of each chip resistor varies by the polarity of circuit tester, the minimum and maximum value are indicated at power off condition.
L = (or means) minimum value
H = (or means) maximum value

CAUTION : ON P.C. BOARD HANDLING
1) Avoid vibration and shock.
2) Do not bend and twist.

5. SCHEMATIC DIAGRAM

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

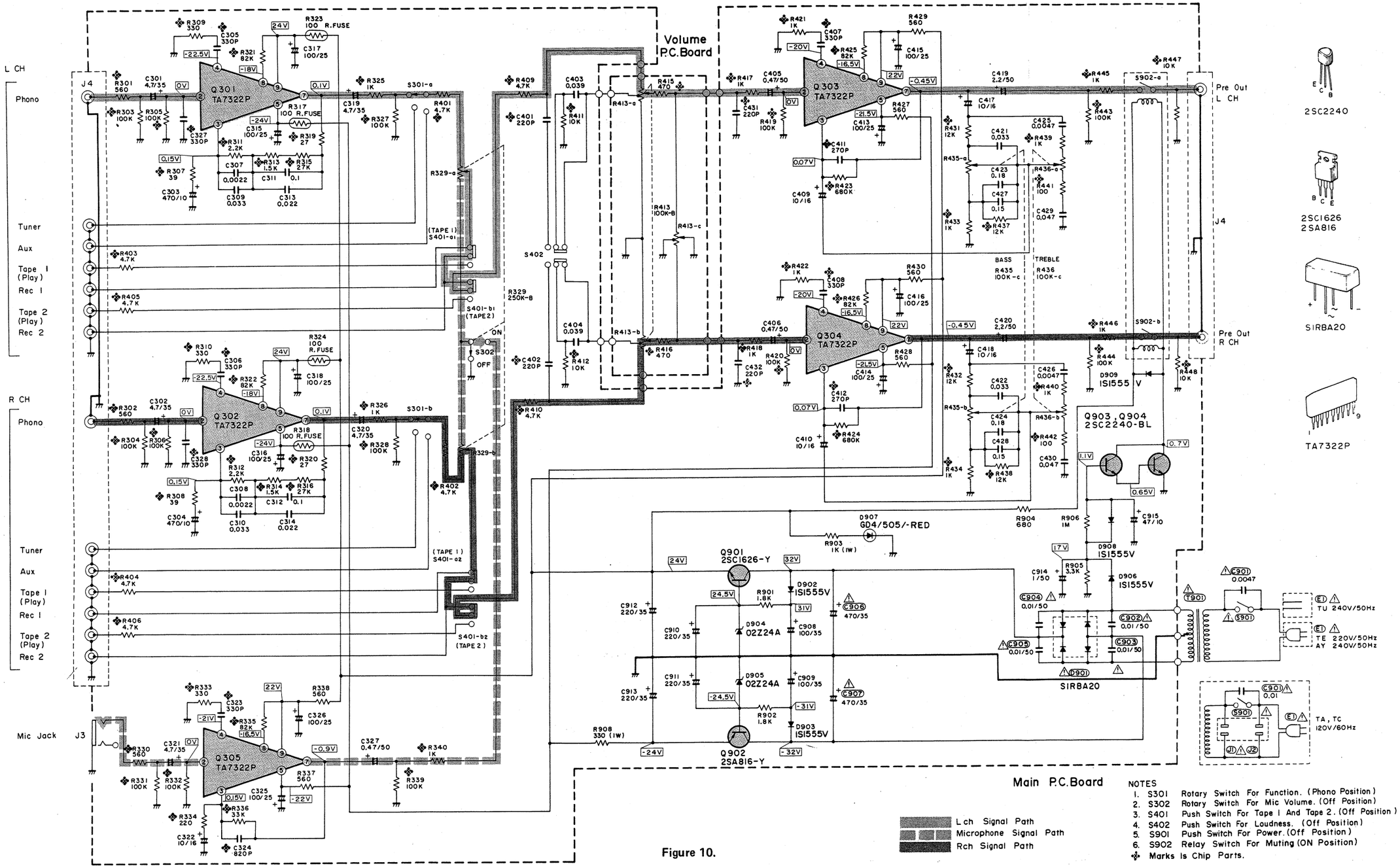
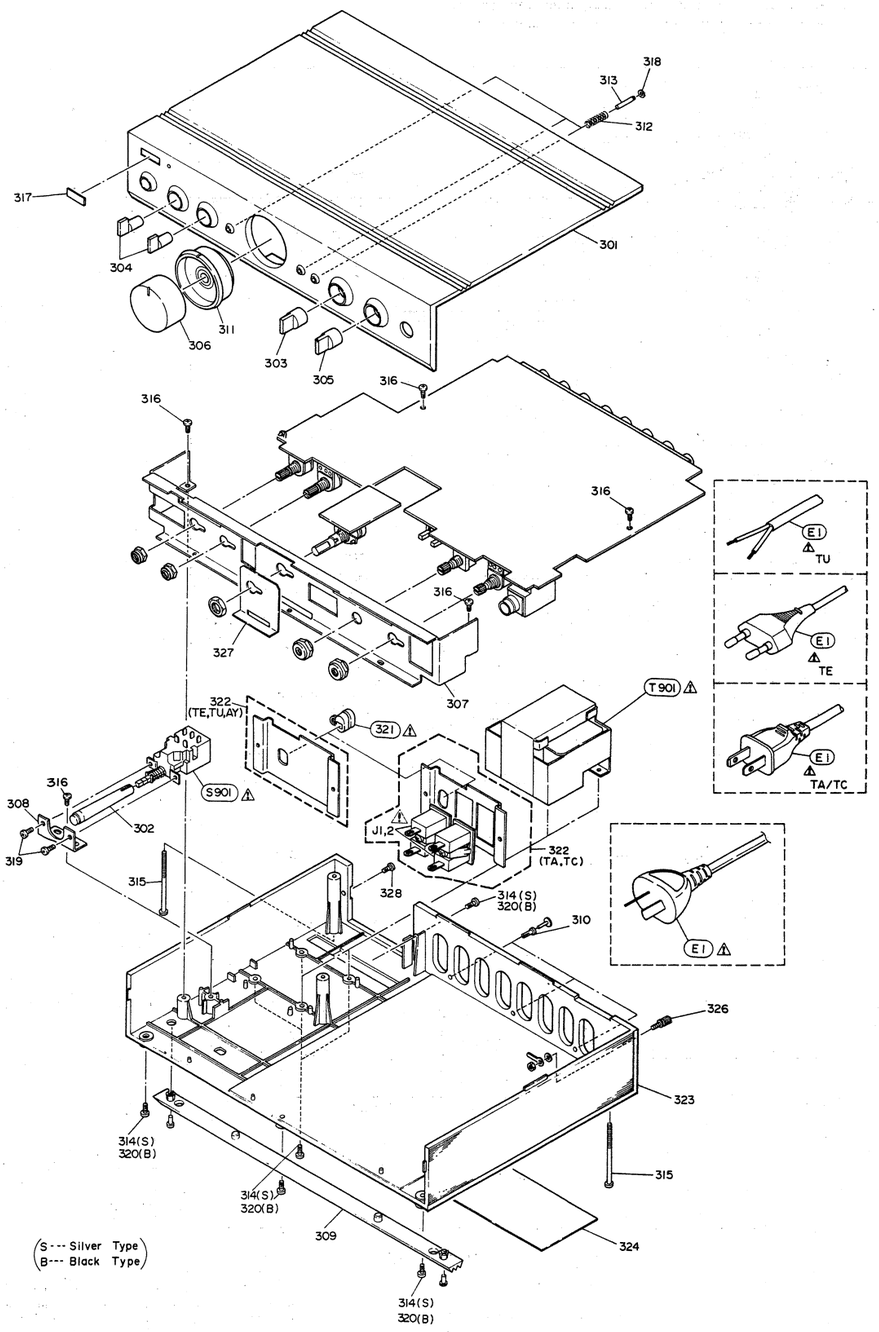


Figure 10.

NOTES
1. S301 Rotary Switch For Function. (Phono Position)
2. S302 Rotary Switch For Mic Volume. (Off Position)
3. S401 Push Switch For Tape 1 And Tape 2. (Off Position)
4. S402 Push Switch For Loudness. (Off Position)
5. S901 Push Switch For Power. (Off Position)
6. S902 Relay Switch For Muting (ON Position)

✣ Marks Is Chip Parts.

EXPLODED VIEW (CABINET)



NOTE: Parts excluded in the Parts List are not available as replacement parts.

Figure 11

7. PARTS LIST

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description	
CABINET PARTS			
301	20017137	Panel Ass'y (TE, TU, AY)	C12
301	20017140	Panel Ass'y (TA, TC)	C12
301	20017142	Panel Ass'y (TA, TC)	C12B
302	22824266	Knob Ass'y, Power	
303	22826223	Knob Ass'y, Select	
304	22826269	Knob Ass'y, Level	
305	22826249	Knob Ass'y, Microphone	
306	22826257	Knob Ass'y Volume	
309	22874045	Leg (TE, TU, AY)	
309	22874058	Leg (TA, TC)	
310	22705022	Rivet Plastic, 3ϕ x 5.5 mm	
311	22826255	Knob, Balance	
312	25772471	Spring, Knob	
313	25837237	Knob, Push	
314	22707327	Screw, BID, 3ϕ x 8 mm Tap	C12
315	22707328	Screw, BID, 3ϕ x 45 mm	C12
315	22701287	Screw, BID, 3ϕ x 45 mm	C12B
316	22707165	Screw, BID, 3ϕ x 10 mm Tapping	
317	22864193	Badge, Aurex (TE, TU, AY)	C12
317	22864257	Badge, TOSHIBA (TA, TC)	C12
317	22864275	Badge, TOSHIBA (TA, TC)	C12B
318	25764536	Washer, 2ϕ	
319	22707066	Screw, BID, 3ϕ x 6 mm	
⚠ 320	22701326	Screw, BID, 3ϕ x 8 mm Tapping	
⚠ 321	25845528	Bush, Nylon (TE, TU, AY)	
⚠ 321	25845120	Bush, Nylon (TA, TC)	
322	22755289	Plate Power (TE, TU, AY)	C12
322	22755349	Plate Power (TA, TC)	C12
322	22755350	Plate Power (TA, TC)	C12B
323	22821521	Chassis , Ass'y Mold	C12
323	22821513	Chassis , Ass'y Mold	C12B
324	22950957	Plate Name (TE)	C12
324	22950972	Plate Name (TU, TY)	C12
324	22950989	Plate Name (TA)	C12
324	22950988	Plate Name (TC)	C12
324	22950996	Plate Name (TA)	C12B
324	22950997	Plate Name (TC)	C12B
326	22162327	Terminal, Ground	
328	22707490	Screw, BID, 3ϕ x 6 mm Tapping	C12
328	22701237	Screw, BID, 3ϕ x 6 mm Tapping	C12B

Symbol No.	Part No.	Description
TRANSISTORS, DIODES AND IC'S		
Q301, 302		IC, TA7322P
Q303, 304		
Q305		
Q901		Transistor, 2SC1626-Y
Q902		Transistor, 2SA816-Y
Q903, 904		Transistor, 2SC2240-BL
⚠ D901	22115484	Diode, SIRBA20
D902, 903		Diode, 1S1555V
D904, 905		Diode, 02Z24A
D906		Diode, 1S1553V
D907	22115436	Diode, GD4/505/-RED
D908, 909		Diode, 1S1555V
ELECTRICAL PARTS		
⚠ T901	22223711	Transformer, Power (TE)
⚠ T901	22223724	Transformer, Power (TU, AY)
⚠ T901	22223745	Transformer, Power (TA, TC)
S301	22195326	Rotary Switch, Function
S401	22195453	Push Switch, Tape Select
S402	22195294	Push Switch, Loudness
⚠ S901	22146204	Push Switch, Power (TE, TU, AY)
⚠ S901	22195226	Push Switch, Power (TA, TC)
⚠ S902	22148647	Relay
⚠ J1, 2	22167874	AC Socket (TA, TC)
J3	22163775	Jack, Terminal
J4	22163676	Jack, Microphone
⚠ E1	22176286	Cord, Power (TE)
⚠ E1	22176536	Cord, Power (TU)
⚠ E1	22176588	Cord, Power (AY)
⚠ E1	22176573	Cord, Power (TA, TC)

Symbol No.	Part No.	Description
		CAPACITORS
		J = ±5%, K=±10%, M = ±20%, P = –0 +100%, Z = –20 +80%
		ABBREVIATIONS: CD = Ceramic Dick, EL = Electrolytic MY = Mylar
C301, 302	22467479	EL, 4.7mfd, 35V
C303, 304	22483471	EL, 470mfd, 10V, M
C305, 306	22343331	CD, 330pF, 50V, M (Chip)
C307, 308	22371222	MY, 0.0022mfd, 50V, J
C309, 310	22371333	MY, 0.033mfd, 50V, J
C311, 312	22371104	MY, 0.1mfd, 50V, J
C313, 314	22371223	MY, 0.022mfd, 50V, J
C315, 316	22486101	EL, 100mfd, 25V, M
C317, 318	22486101	EL, 100mfd, 25V, M
C319, 320	22467479	EL, 4.7mfd, 35V
C321	22467479	EL, 4.7mfd, 35V
C322	22485100	EL, 10mfd, 16V, M
C323	22343331	CD, 330pF, 50V, M (Chip)
C324	22349821	CD, 820pF, 50V, K (Chip)
C325	22486101	EL, 100mfd, 25V, M
C326	22486101	EL, 100mfd, 25V, M
C327	22488478	EL, 0.47mfd, 50V, M
C328, 329	22343331	CD, 330pF, 50V, M (Chip)
C401, 402	22349221	CD, 220pF, 50V, K (Chip)
C403, 404	22371393	MY, 0.039mfd, 50V, J
C405, 406	22488478	EL, 0.47mfd, 50V, M
C407, 408	22343331	CD, 330pF, 50V, M (Chip)
C409, 410	22485100	EL, 10mfd, 16V, M
C411, 412	22343271	CD, 270pF, 50V, M (Chip)
C413, 414	22486101	EL, 100mfd, 25V, M
C415, 416	22486101	EL, 100mfd, 25V, M
C417, 418	22485100	EL, 10mfd, 16V, M
C419, 420	22488229	EL, 2.2mfd, 50V
C421, 422	22371333	MY, 0.033mfd, 50V, J
C423, 424	22371184	MY, 0.18mfd, 50V, J
C425, 426	22371472	MY, 0.0047mfd, 50V, J
C427, 428	22371154	MY, 0.15mfd, 50V, J
C429, 430	22371473	MY, 0.047mfd, 35V, J
C431, 432	22349221	CD, 220pF, 50V, K (Chip)
⚠ C901	22340150	CD, 0.0047 mfd, 400V, M (TE, TU, AY)
⚠ C901	22340140	CD, 0.01mfd, AC 125V, P (TA, TC)
⚠ C902, 903	22342103	CD, 0.01mfd, 50V, Z
⚠ C904, 905	22342103	CD, 0.01mfd, 50V, Z
⚠ C906, 907	22487471	EL, 470mfd, 35V, M
C908, 909	22487101	EL, 100mfd, 35V, M
C910, 911	22487221	EL, 220mfd, 35V, M
C912, 913	22487221	EL, 220mfd, 35V, M
C914	22488109	EL, 1mfd, 50V, M
C915	22483470	EL, 47mfd, 10V, M

Symbol No.	Part No.	Description
		RESISTORS
		All resistors are 1/8W, ±5% carbon film unless otherwise noted.
R301, 302	22553561	560 ohm (Chip)
R303, 304	22553104	100k ohm (Chip)
R305, 306	22553104	100k ohm (Chip)
R307, 308	22555390	39 ohm, ¼W (Chip)
R309, 310	22553331	330 ohm (Chip)
R311, 312	22553221	2.2k ohm (Chip)
R313, 314	22555152	1.5k ohm, ¼W (Chip)
R315, 316	22553273	27k ohm (Chip)
R317, 318	22500122	100 ohm, Fusible
R319, 320	22555270	27 ohm, ¼W (Chip)
R321, 322	22553823	82k ohm (Chip)
R323, 324	22500122	100 ohm, Fusible
R325, 326	22553102	1k ohm (Chip)
R327, 328	22553104	100k ohm (Chip)
R329	22652411	250k ohm, Variable (with S302)
R330	22553561	560 ohm (Chip)
R331	22553104	100k ohm (Chip)
R332	22553104	100k ohm (Chip)
R333	22553331	330 ohm (Chip)
R334	22553221	220 ohm (Chip)
R335	22553823	82k ohm (Chip)
R336	22553333	33k ohm (Chip)
R337	22555561	560 ohm, ¼W
R338	22555561	560 ohm, ¼W
R339	22553104	100k ohm (Chip)
R340	22553102	1k ohm (Chip)
R401, 402	22553472	4.7k ohm (Chip)
R403, 404	22553472	4.7k ohm (Chip)
R405, 406	22553472	4.7k ohm (Chip)
R409, 410	22553472	4.7k ohm (Chip)
R411, 412	22553103	10k ohm (Chip)
R413	22651518	100k ohm, Variable
R415, 416	22553471	470 ohm (Chip)
R417, 418	22553102	1k ohm (Chip)
R419, 420	22553104	100k ohm (Chip)
R421, 422	22553102	1k ohm (Chip)
R423, 424	22555684	680k ohm, ¼W (Chip)
R425, 426	22666823	82k ohm, ¼W (Chip)
R427, 428	22555561	560 ohm, ¼W
R429, 430	22555561	560 ohm, ¼W
R431, 432	22553123	12k ohm (Chip)
R433, 434	22553102	1k ohm (Chip)
R435	22651522	100k ohm, Variable
R436	22651522	100k ohm, Variable
R437, 438	22553123	12k ohm (Chip)
R439, 440	22553102	1k ohm (Chip)
R441, 442	22555101	100 ohm, ¼W (Chip)
R443, 444	22553104	100k ohm (Chip)
R445, 446	22553102	1k ohm (Chip)

Symbol No.	Part No.	Description
R447, 448	22553103	10k ohm (Chip)
R901, 902	22555182	1.8k ohm, ¼W
R903	22570274	1k ohm 1W
R904	22555681	680 ohm, ¼W
R905	22555332	3.3k ohm, ¼W
R906	22555155	1M ohm, ¼W
ACCESSORIES		
	22902461	Owner's Manual (TE, TU, AY)
	22902512	Owner's Manual (TA, TC)
	22170401	Junction Cord

TOSHIBA CORPORATION
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